

ABSTRACT OF THE DISCLOSURE

A method and apparatus for maintaining a plasma in a plasma region, by supplying RF power at a fundamental frequency to the plasma region together with a gas in order to create an RF electromagnetic field which interacts with the gas to create a plasma that contains electromagnetic energy components at frequencies that are harmonics of the fundamental frequency. The energy components at frequencies that are harmonics of the fundamental frequency are monitored and controlled by placing a harmonic multiplexer containing a matching network and RF filter elements in energy receiving communication with the plasma.